Complete if Known 10/574,967 **Application Number** NFORMATION DISCLOSURE May 24, 2007 Filing Date STATEMENT BY APPLICANT Jonathan Miles BROWN First Named Inventor 1645 **Group Art Unit** Unassigned **Examiner Name** 5906 Confirmation No. 2833-113 7 Attorney Docket Number of 1 Sheet

	-		U.S. PATE	NT DOCUMENTS	
		U.S. Patent Doc		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document
Examiner Initials*	Cite No.1	Number	Kind Code <sup>2</sup> (if known)	of Cited Document	MM-DD-YYYY
	1	5,168,225		YAMAZAKI et al.	12-01-1992
	2	5,324,658		COX et al.	06-28-1994
	3	5,393,669		BROWN	02-28-1995
	4	5,627,044		BROWN	05-06-1997
	5	5,698,401		FESIK et al.	12-16-1997
	6	5,804,390		FESIK et al.	09-08-1998
	7	5,817,474		BROWN	10-06-1998
	8	5,891,643		FESIK et al.	04-06-1999
	9	5,989,827		FESIK et al.	11-23-1999
	10	6,111,066		ANDERSON III et al.	08-29-2000
	11	6,333,149	B1	SEM	12-25-2001
<del></del>	12	6,335,196		ANDERSON III et al.	01-01-2002
	13	6,340,578		ANDERSON III et al.	01-22-2002
	14	6,376,253		ANDERSON III et al.	04-23-2002
	15	6,882,939	B2	HOMANS et al.	04-19-2005
	16	2003/0119109	A1	VAN DEN BURG et al.	06-26-2003
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			FOR	EIGN PAT	ENT DOCUMENTS		
Examiner Initials*	Cite No.1	Office <sup>3</sup>	Foreign Patent Docun	nent  Kind <sup>5</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T <sup>6</sup>
	17	0000	JP 2208579		JEOL LTD.	08-20-1990	АВ
	18		JP 4046143		HITACHI LTD.	02-17-1992	АВ
<u> </u>	19		WO 9418339		MARTEK BIOSCIENCES CORP.	08-18-1994	
	20		WO 9848264	4	ABBOTT LAB.	10-29-1998	
	21		WO 9911589		MARTEK BIOSCIENCES CORP.	03-11-1999	
	22		WO 03053910		JAPAN SCIENCE & TECH CORP.	07-03-2003	AB
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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	23	Al-Hashimi et al., "Variation of Molecular Alignment as a Means of Resolving Orientational Ambiguities in Protein Structures From Dipolar Couplings," J. Magn. Reson. 143:402-406, 2000.	
	24	Appelt et al., "Design of Enzyme Inhibitors Using Iterative Protein Crysallographic Analysis," J. of Med. Chem. 34(7):1925-1934, 1991.	
	25	Archer et al., "Transforming Growth Factor ß1: NMR Signal Assignments of the Recombinant Protein Expressed and Isotopically Enriched Using Chinese Hamster Ovary Cells," Biochemistry 32:1152-1163, 1993.	
,	26	Archer et al., "Transforming Growth Factor ß1: Secondary Structure as Determined by Heteronuclear Magnetic Resonance Spectroscopy," Biochemistry 32:1164-1171, 1993.	
	27	Battiste et al., "Utilization of Site-Directed Spin Labeling and High-Resolution Heteronuclear Nuclear Magnetic Resonance for Global Fold Determination of Large Proteins with Limited Nuclear Overhauser Effect Data," Biochemistry 39:5355-5365, 2000.	
	28	Chaykovski et al., "Methyl Side-Chain Dyanmics in Proteins Using Selective Enrichment With a Single Isotopomer," J. Am. Chem. Soc. 125:15767-15771, 2003.	
	29	Coughlin et al., "Improved Resolution and Sensitivity of Triple-Resonance NMR Methods for the Structural Analysis of Proteins by Use of a Backbone-Labeling Strategy," J. Am. Chem. Soc. 121:11871-11874, 1999.	
	30	Driscoll et al., "Structure of Domain 1 of rat T Lymphocyte CD2 Antigen," Nature 353:762-765, 1991.	_
	31	Duthaler, "Recent Developments in the Stereoselective Synthesis of α-Aminoacids," Tetrahedron Lett. 50(6):1539 -1650, 1994.	
	32	Eichele et al., "Nitrogen-14 Coupled Dipolar-Chemical Shift <sup>13</sup> C NMR Spectra of the Amide Fragment of Peptides in the Solid State," J. Phys. Chem. 97:8909-8916, 1993.	
	33	Feeney, "NMR Studies of Interactions of Ligands With Dihydrofolate Reductase," Biochem. Pharmacol. 40(1):141-152, 1990.	
	34	Freund et al., "Structural and Dynamic Properties of the F <sub>v</sub> Fragment and the Single-Chain F <sub>v</sub> Fragment of an Antibody in Solution Investigated by Heteronuclear Three-Dimensional NMR Spectroscopy," Biochemistry 33:3296-3303, 1994.	
	35	Gardner et al., "Global Folds of Highly Deuterated, Methyl-Protonated Proteins by Multidimensional NMR," Biochemistry 36(6):1389-1401, 1997.	

					Con	nplete if Known
					Application Number	10/574,967
	INFORMAT	TION DISC	LOSU	RE	Filing Date	May 24, 2007
	STATEME	nt by api	PLICA	TV	First Named Inventor	Jonathan Miles BROWN
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					Examiner Name	Unassigned
					Confirmation No.	5906
-	Sheet	4	of	7	Attorney Docket Number	2833-113

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36	Gardner et al., "Production and Incorporation of <sup>15</sup> N, <sup>13</sup> C, <sup>2</sup> H ( <sup>1</sup> H-δ1 Methyl) Isoleucine Into Proteins for Multidimensional NMR Studies," J. Am. Chem. Soc. 119:7599-7600, 1997
37	Giesen et al., "Determination of Protein Global Folds Using Backbone Residual Dipolar Coupling and Long-Range NOE Restraints," J. Biomol. NMR 25:63-71, 2003.
38	Giesen et al., "¹H-Filtered Correlation Experiments for Assignment and Determination of Coupling Constants in Backbone Labelled Proteins," J. Biomol. NMR 22:21-26, 2002.
39	Giesen et al., "Measurement of One-Bond <sup>1</sup> H <sup>α</sup> - <sup>13</sup> C <sup>α</sup> Couplings in Backbone-Labelled Proteins," J. Biomol. NMR 19:255-260, 2001.
40	Goto et al., "A Robust and Cost-Effective Method for the Production of Val, Leu, Ile (δ1) Methyl-Protonated <sup>15</sup> N-, <sup>13</sup> C-, <sup>2</sup> H-Labeled Proteins," J. Biomol. NMR 13:369-374, 1999.
41	Goto et al., "New Developments in Isotope Labeling Strategies for Protein Solution NMR Spectroscopy," Curr. Opin. Struc. Biol. 10:585-592, 2000.
42	Grzesiek et al., "13C Line Narrowing by <sup>2</sup> H Decoupling in <sup>2</sup> H/ <sup>13</sup> C/ <sup>15</sup> N-Enriched Proteins, Application to Triple Resonance 4D J Connectivity of Sequential Amides," J. Am. Chem. Soc. 115:4369-4370, 1993.
43	Hansen et al., "A Practical Method for Uniform Isotopic Labeling of Recombinant Proteins in Mammalian Cells," Biochemistry 31(51):12713-12718, 1992.
44	Hajduk et al., "NMR-Based Screening of Proteins Containing <sup>13</sup> C-Labeled Methyl Groups," J. Am. Chem. Soc. 122:7898-7904, 2000.
45	Ikura et al., "A Novel Approach for Sequential Assignment of <sup>1</sup> H, <sup>13</sup> C, and <sup>15</sup> N Spectra of Larger Proteins: Heteronuclear Triple-Resonance Three-Dimensional NMR Spectroscopy. Application of Calmodulin," Biochemistry 29:4659-4667, 1990.
46	Ishima et al., "Transverse <sup>13</sup> C Relaxation of CHD <sub>2</sub> Methyl Isotopmers to Detect Slow Conformational Changes of Protein Side Chains," J. Am. Chem. Soc. 121:11589-11590, 1999.
47	Ishima et al., "Comparison of Methyl Rotation Axis Order Parameters Derived from Model-Free Analyses of <sup>2</sup> H and <sup>13</sup> C Longitudinal and Transverse Relaxation Rates Measured in the Same Protein Sample," J. Am. Chem. Soc. 123:6164-6171, 2001.
48	Jakoby et al., "Ligand-Protein Electrostatic Interactions Govern the Specificity of Retinol- and Fatty Acid-Binding Proteins," Biochemistry 32:872-878, 1993.
49	Kay et al., "Four-Dimensional Heteronuclear Triple-Resonance NMR Spectroscopy of Interleukin-1ß in Solution," Science 249:411-414, 1990.
50	Kent, "Chemical Synthesis of Peptides and Proteins," Ann. Rev. Biochem. 57:957-989, 1988.

				Con	Complete if Known		
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				Confirmation No.	5906		
Sheet	5	of	7	Attorney Docket Number	2833-113		

	51	Lankiewicz et al., "Synthesis of Amino Acid Derivatives Substituted in the Backbone with Stable Isotopes for Application in Peptide Synthesis," J. Chem. Soc. Perkin Trans. 2503-2510, 1994.
	52	Lavanant et al., "Formation and Fragmentation of α-Amino Acids Complexed by Cu <sup>+</sup> ," J. Mass Spectrometry 32:1037-1049, 1997.
	53	Lee et al., "Comparison of <sup>2</sup> H and <sup>13</sup> C NMR Relaxation Techniques for the Study of Protein Methyl Group Dynamics in Solution," J. Am. Chem. Soc. 121:2891-2902, 1999.
,	54	LeMaster et al., "Preparative-Scale Isolation of Isotopically Labeled Amino Acids," Anal. Biochem. 122:238-247, 1982.
	55	LeMaster, "Deuteration in Protein Proton Magnetic Resonance," Meth. Enzymol. 177:23-43, 1989.
	56	LeMaster, "Uniform and Selective Deuteration in Two-Dimensional NMR of Proteins," Annu. Rev. Biophys. Chem. 19:243-266, 1990.
	57	Lerche et al., "Pulse Sequences for Measurement of One-Bond <sup>15</sup> N- <sup>1</sup> H Coupling Cosntants in the Protein Backbone," J. Magn. Res. 140:259-263, 1999.
	58	Lian et al., "Protein-Ligand Interactions: Exchange Processes and Determination of Ligand Conformation and Protein-Ligand Contacts," Meth. Enzymol. 239:657-739, 1994.
	59	Lustbader et al., "Expression of Human Chorionic Gonadotropin Uniformly Labeled With NMR Isotopes in Chinese Hamster Ovary Cells: an Advance Toward Rapid Determination of Glycoprotein Structures," J. Biomol. NMR 7:295-304, 1996.
	60	Martin et al., "Stereoselective Synthesis of L-[1- <sup>13</sup> C], L-[2- <sup>13</sup> C] and L-[ <sup>15</sup> N] Amino Acids," Isotopes Environ. Health Stud. 32:15-19, 1996.
	61	Mittermaier et al., "Analysis of Deuterium Relaxation-Derived Methyl Axis Order Parameters and Correlation With Local Structure," J. Biomol. NMR 13:181-185, 1999.
	62	Mueller et al., "Global Folds of Proteins With Low Densities of NOEs Using Residual Dipolar Couplings: Application to the 370-Residue Maltodextrin-Binding Protein," J. Mol. Biol. 300:197-212, 2000.
	63	Muhandiram et al., "Measurement of <sup>2</sup> H T <sub>1</sub> and T <sub>1p</sub> Relaxation Times in Uniformly <sup>13</sup> C-Labeled and Fractionally <sup>2</sup> H-Labeled Proteins in Solution," J. Am. Chem. Soc. 117:11536-11544, 1995.
-	64	Nyassé et al., "First Synthesis of a Fully [15N, 13C] Backbone-Labelled Peptide," 15N NMR Spectrum of Corresponding Leu-Enkephalin," J. Chem. Soc., Chem. Commun. 2005-2006, 1994.
,	65	Oppolzer et al., "Asymmetric Alkylations of a Sultam-Derived Glycinate Equivalent: Practical Preparation of Enantiomerically Pure α-Amino Acids," Tetrahedron Lett. 30(44):6009-6010, 1989.

		·		Con	Complete if Known		
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				Confirmation No.	5906		
Sheet	6	of	7	Attorney Docket Number	2833-113		

66	Oppolzer et al., "201. Asymmetric Alkylations of a Sultam-Derived Glycine Equivalent: Practical Preparation of Enantiomerically Pure α-Amino Acids," Helvetica Chimica Acta 77:2363-2380, 1994.
67	Oppolzer et al., "153. Asymmetric Synthesis of $\alpha$ -Amino Acids and $\alpha$ -N-Hydroxyamino Acids from N-Acylbornane-10,2-sultams: 1-Chloro-1-nitrosocyclohexane as a Practical [NH <sub>2</sub> +] Equivalent," Helvetica Chimica Acta 75:1965-1978, 1992.
68	Ottiger et al., "Determination of Relative N-H <sup>N</sup> , N-C', C <sup>α</sup> -C', C <sup>α</sup> -H <sup>α</sup> Effective Bond Lengths in a Protein by NMR in a Dilute Liquid Crystalline Phase," J. Am. Chem. Soc. 120:12334-12341, 1998.
69	Perutz et al., "Structure of Hemoglobin: A Three-Dimensional Fourier Synthesis at 5.5- Å. Resolution, Obtained by X-ray Analysis," Nature 185:416-422, 1960.
70	Pervushin et al., "Attenuated T <sub>2</sub> Relaxation by Mutual Cancellation of Dipole-Dipole Coupling and Chemical Shift Anisotropy Indicates an Avenue to NMR Structures of Very Large Biological Macromolecules in Solution," Proc. Natl. Acad. Sci. <i>USA</i> 94:12366-12371, 1997.
71	Powers et al., " <sup>1</sup> H, <sup>15</sup> N, <sup>13</sup> C, and <sup>13</sup> CO Assignments of Human Interleukin-4 Using Three- Dimensional Double- and Triple-Resonance Heteronuclear Magnetic Resonance Spectroscopy," Biochemistry 31:4334-4346, 1992.
 72	Ragnarsson, "Proteinogenic Amino Acids Labelled With <sup>15</sup> N and or <sup>13</sup> C for Application in Peptide Synthesis: A Short Review with a Comprehensive List of Published Derivatives," J. Peptide Science 3:149-156, 1995.
 73	Rosen et al., "Selective Methyl Group Protonation of Predeuterated Proteins," J. Mol. Biol. 263:627-636, 1996.
74	Schöllkopf, "Enantioselective Synthesis of Nonproteinogenic Amino Acids," Top. Curr. Chem, 109(65):65-84, 1983.
 75	Schwarzinger et al., "Sequence-Dependent Correction of Random Coil NMR Chemical Shifts," J. Am. Chem. Soc. 123:2970-2978, 2001.
76	Shuker et al., "Discovering High-Affinity Ligands for Proteins: SAR by NMR," Science 274:1531-1534, 1996.
. 77	Skrynnikov et al., "Probing Slow Time Scale Dynamics at Methyl-Containing Side Chains in Proteins by Relaxation Dispersion NMR Measurements: Application to Methionine Residues in a Cavity Mutant of T4 Lysozyme," J. Am. Chem. Soc. 123:4556-4566, 2001.
 78	Soloshonok et al., "Asymmetric Synthesis of Phosphorus Analogues of Dicarboxylic $\alpha$ -Amino Acids," J. Chem. Soc. Perkin Trans. 1:1525-1529, 1992.
79	Weller et al., "Structural and Conformational Analysis of Glycan Moieties <i>in Situ</i> on Isotopically <sup>13</sup> C, <sup>15</sup> N-Enriched Recombinant Human Chorionic Gonadotropin," Biochemistry 35:8815-8823, 1996.

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				Confirmation No.	5906	
heet	7	of	7	Attorney Docket Number	2833-113	

	80	Winkler et al., "Principles and Results of Stable Isotope Labelling of L-α-Aminoacids by Combined Chemical and Enzymatic Methods," Isotopes Environ. Health Stud. 31:161-190, 1995.
	81	Yang et al., "A Study of Protein Side-Chain Dynamics From New <sup>2</sup> H Auto-Correlation and <sup>13</sup> C Cross-Correlation NMR Experiments: Application to the N-terminal SH3 Domain from drk," J. Mol. Biol. 276:939-954, 1998.
	82	Zhang et al., "A Novel Class of Chemically Modified Iodo-Containing Resins: Design, Synthesis and Application to Mass Spectrometry-Based Proteome Analysis," J. Mass Spectrometry 39:447-457, 2004.
	83	Zhou et al., "NMR Studies of the Phosphotransfer Domain of the Histidine Kinase CheA from Escherichia coli: Assignments, Secondary Structure, General Fold, and Backbone Dynamics," Biochemistry 34:13858-13870, 1995.
	-	
<u> </u>		
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